ResMed

VPAP™ III ST-A with QuickNav

User Guide

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User Manual

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Introduction

The VPAP™ III ST-A with QuickNav™ is a bilevel pressure support ventilator specifically designed for non-invasive mask ventilation.

This user manual contains the information you need for the correct use of your VPAP III ST-A with QuickNav.

User/Owner Responsibility

The user or owner of this system shall have sole responsibility and liability for any injury to persons or damage to property resulting from:

- operation which is not in accordance with the operating instructions supplied
- maintenance or modifications carried out unless in accordance with authorised instructions and by authorised persons.

Please read this manual carefully before use.

This manual contains special terms and icons that appear in the margins to draw your attention to specific and important information.

- Warning alerts you to possible injury.
- Caution explains special measures for the safe and effective use of the device.
- Note is an informative or helpful note.

Medical Information

Intended Use

The VPAP III ST-A system is intended to provide non-invasive ventilation for patients with respiratory insufficiency or obstructive sleep apnoea (OSA), in the hospital or home.

Contraindications

This device should not be used if you have an insufficient respiratory drive to endure brief interruptions in non-invasive ventilation therapy. This device is not a life support ventilator and may stop operating with power failure or in the unlikely event of certain fault conditions.

If you have any of the following conditions, tell your doctor before using this device:

- acute sinusitis or otitis media
- epistaxis causing a risk of pulmonary aspiration
- conditions predisposing to a risk of aspiration of gastric contents
- impaired ability to clear secretions
- hypotension or significant intravascular volume depletion
- pneumothorax or pneumomediastinum
- recent cranial trauma or surgery.

Adverse Effects

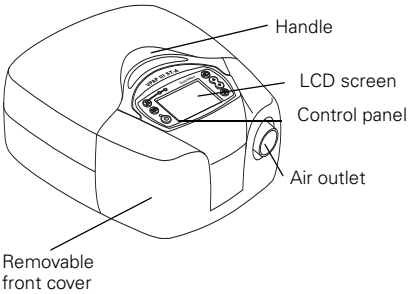
You should report unusual chest pain, severe headache or increased breathlessness to your physician. An acute upper respiratory tract infection may require temporary discontinuation of treatment.

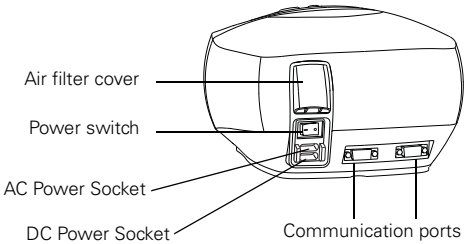
The following side effects may arise during the course of therapy:

- drying of the nose, mouth or throat
- bloating

- ear or sinus discomfort
- eye irritation
- mask-related skin irritations
- chest discomfort.

The VPAP III ST-A with QuickNav





The VPAP III ST-A with QuickNav comprises:
- VPAP III ST-A with QuickNav (shown above)
- Power cord
- Carry bag
- 2 m air tubing.

The following accessories may be purchased separately:
- 3 m air tubing
- Medium (52 cm) air tubing for the HumidAire and ResMed Passover humidifiers
- Hypoallergenic air filter.

WARNING
- Do not connect any device to the communication ports. Although your health care provider may connect specially designed devices to the communication ports of this device, connection of other devices could result in injury, or damage to the unit.
- In the clinical environment, any PC that is used with this device must be at least 1.5 m away from, or at least 2.5 m above the patient. It must also comply with IEC 60950 or equivalent.

Masks

You will also need a ResMed mask (supplied separately). For information on using your mask, see your mask manual. For the latest available masks, or to select the appropriate setting for your mask, see **www.resmed.com** on the **Products** page under **Service & Support**.

Humidifiers

A humidifier may be required if you are experiencing dryness of the nose, throat or mouth. This device is compatible for use with the following ResMed humidifiers:
- HumidAire 2i™ heated humidifier
- HumidAire 2iC™ passover humidifier

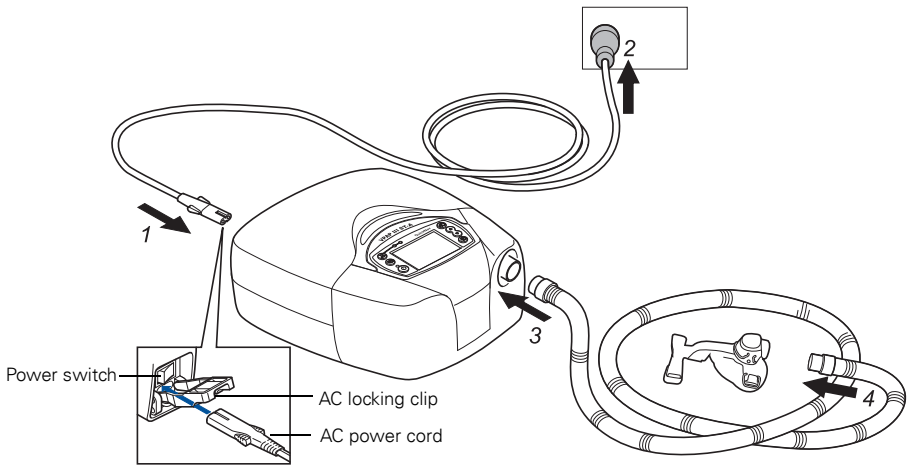
- HumidAire™ heated humidifier
- ResMed Passover humidifier.

WARNING
The HumidAire 2i, HumidAire 2iC, HumidAire heated humidifier and the ResMed Passover are compatible for use with this device. Please refer to Warnings on page 19.

Setting up the device

Place the device on a flat surface near the head of your bed.

CAUTION
- Be careful not to place the device where it can be bumped or where someone is likely to trip over the power cord.
- Make sure the area around the flow generator is dry and clean. It should also be clear of bedding, clothes and other potential blockages.



1 Connect the power cord.

Note: *ResMed recommends using the AC power cord supplied with the unit. If a replacement power cord is required, contact your ResMed service centre.*

2 Plug the free end of the power cord into a power outlet.

CAUTION
Do not connect both AC and DC power cords to the device at the same time, unless otherwise specified.

WARNING
- Make sure the power cord and plug are in good condition and the equipment is not damaged.
- The air filter cover protects the device in the event of accidental liquid spillage onto the device. Ensure that the air filter and air filter cover are fitted at all times.

3 Connect one end of the air tubing firmly onto the air outlet of the device.

WARNING
Only ResMed air tubing should be used with your flow generator. A different type of air tubing may alter the pressure you actually receive and reduce the effectiveness of your treatment. Do not use conductive or anti-static hoses or tubes.

4 Connect your mask system to the free end of the air tubing.

Attaching a Humidifier

WARNING
When using a humidifier, position it lower than your sleeping position, so that any excess condensation drains back into the water chamber, and at the same level or lower than the device.

Notes:

- *You must activate the humidifier option in the menus if you are using a HumidAire or Passover humidifier.*
- *For details on using humidifiers, please see you relevant user manual.*

HumidAire 2i/2iC Humidifier

The HumidAire 2i or 2iC attaches to the front of the device to provide heated or passover humidification, respectively. No other accessories are required for its use. The VPAP III ST-A with QuickNav automatically detects the presence of the HumidAire 2i.

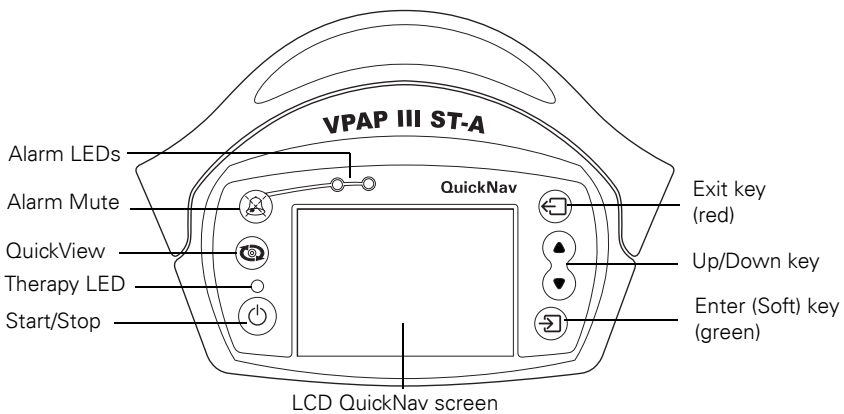
HumidAire or Passover Humidifier

Medium size (52 cm) air tubing is a necessary accessory for connecting the device to the HumidAire or Passover humidifier.

Note: *Place the* device *on top of the humidifier. Do not place the device underneath the humidifier. (This is to avoid water spilling into the device.)*

Using the LCD QuickNav Screen and Keypad

The control panel of this device includes an LCD screen, LEDs and keypad.



LCD Screen

The LCD screen displays the menus, treatment screens and alarm conditions.

To assist you in adjusting the device, the keypad and LCD are equipped with a backlight. The LCD backlight comes on when the device is turned on or when you press a key, and turns off after two minutes. The LCD backlight may be set to be on continually. The keypad backlight is on at all times when the device is powered.

LEDs

The **Therapy** LED (white) may be on during treatment, if enabled by your clinician. The **Alarm** LEDs (Red/Yellow) are on during an alarm condition or during alarm testing.

Keypad Keys

The device keypad has the following keys:

Key	Function
Start/Stop 	• Starts or stops treatment. • Extended hold for at least two seconds starts the Mask-Fitting feature.
QuickView 	• Clinical menu function key. Clinical use only.
Alarm Mute 	• Press once to mute alarms. Press a second time to un-mute alarms. If the problem is still present, the alarm will sound again after two minutes. See "Alarm Mute Key" on page 11.
Exit (red) 	• Allows you to exit the current menu or go back through the menus. The function of this key is to **exit** from the current menu or setting.
Up/Down 	• Allows you to scroll through the device menus, submenus and settings.
Enter (green) 	• Allows you to enter or change the menu or function highlighted on the LCD screen. Functions of this key includes **enter**, **change** and **apply,** and it also operates as a **soft key**.

Starting Treatment

The device should be assembled beside your bed with the air tubing and mask system connected.

1 Turn the power switch at the back of the device to on (**I**).
When the device is turned on, the Patient Standby screen is displayed.

Notes:

• If you have the HumidAire 2i attached, see "Using the HumidAire 2i Warm-up Feature" on page 6.

• When the device is turned on, the alarm will sound a test beep and the red and yellow LEDs will flash. To test the alarm manually, or to change the volume, see "Testing the Alarm" on page 11.

2 Fit your mask as described in the mask user instructions.

3 Lie down and arrange the air tubing so that it is free to move if you turn in your sleep.

CAUTION
Do not leave long lengths of air tubing around the top of your bed. It could twist around your head or neck while you are sleeping.

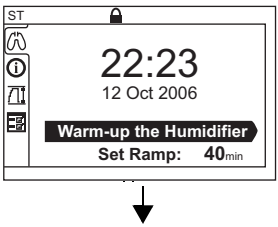
4 To start treatment, press the **Start/Stop** key

or

if the SmartStart function is enabled, simply breathe into the mask and treatment will begin.

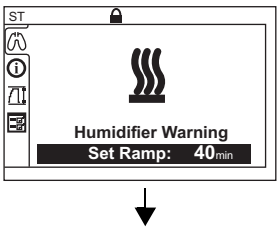
Patient Standby Screens

The Patient Standby screens are displayed when the device is turned on. Depending on your configuration and settings, these screens may display as follows.



Using the HumidAire 2i Warm-up Feature*

If using a HumidAire 2i with the device, you can use the Warm-up feature to pre-heat the water in the humidifier prior to starting treatment. The humidifier will be automatically detected when the device is turned on and the standby screen will give you the option to start warming up the humidifier. After stopping treatment, the device will continue to blow air gently to assist cooling of the heater plate.



Ramp Time*

Ramp time is a feature which can be enabled by your clinician. If you have difficulty becoming accustomed to the full pressure, select a ramp time. The airflow will start very gently and slowly increase to full operating pressure over the selected ramp time. If your clinician has set a maximum ramp time, the Set Ramp option is displayed on the Patient Standby screen. Ramp time can be altered in five-minute increments (from OFF to a maximum ramp time set by your clinician) by using the **Up/Down** key.

Patient Home Screen/Treatment Screen

This screen displays the time and date, the pressure bar and the remaining Ramp time, if a Ramp time has been set.

* If you do not have a H2i attached and/or your clinician has not enabled Ramp time, these options will not appear.

Using the Mask-Fit Feature

This device includes a mask-fit feature to help you fit your mask properly. If a Ramp time is selected, the mask can be adjusted at a pressure closer to the prescribed pressure. To use the mask-fit feature:

1 Fit your mask as described in the user instructions.

2 Hold down the **Start/Stop** key for at least two seconds until air pressure delivery starts[1]. The flow generator will ramp to the mask-fit pressure[2] and will remain at this pressure for three minutes.

The LCD also displays a mask-fit star rating from zero to five stars. Three to five stars indicate a good fit. Zero to two stars indicate that you should adjust your mask.

The mask-fit star rating display disappears after three minutes.

3 If necessary, adjust your mask, mask cushion and headgear to reduce leak and check your mask-fit star rating again on the LCD screen.

4 After three minutes, treatment will begin.

- If you do not wish to wait three minutes, hold down the **Start/Stop** key for at least two seconds and treatment will begin immediately.
- If you press the **Start/Stop** key for less than two seconds, the device will return to standby mode.

Stopping Treatment

To stop treatment at any time, remove your mask and press the **Start/Stop** key

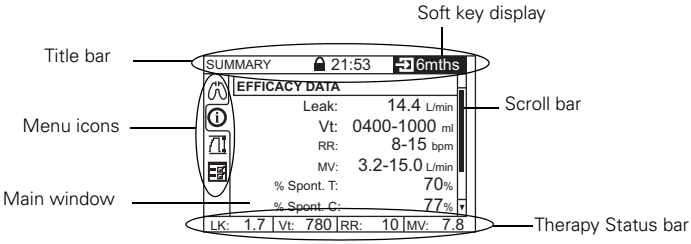
or

if the SmartStart function is enabled, simply remove your mask and treatment will end (SmartStop is not applicable with the "Mir Full" mask setting and certain alarms; see "SmartStart™" on page 10).

1 The mask-fit feature can also be accessed from the Patient Settings Menu.
2 The mask-fit pressure is the set treatment pressure or 10 cm H_2O, whichever is greater.

How to Use the Menus

QuickNav Screen



Menu Navigation

To scroll through the menu icons or items within a menu or submenu:		Press the **Up/Down** key to highlight your selection.
To enter a menu or submenu:		Press **Enter**.
To change a setting or activate a function:		1. Press **Enter**.
		2. Press the **Up/Down** key until the desired setting appears.
		3. Press **Enter** to select the setting.
To exit from changing settings or options:		Press **Enter** or **Exit**.*
To exit out of a menu or submenu:		Press **Exit**.
To scroll through pages or time periods, using the soft key display (when available):		Press **Enter.**

* Pressing **Exit** will not cancel changes you have made to the settings.

Patient Treatment Menu

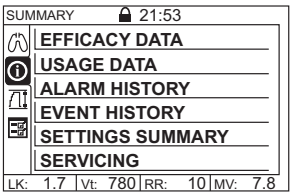
The patient treatment menu displays a pressure bar and any remaining set Ramp time. See "Patient Home Screen/Treatment Screen" on page 6.

Patient Summary Menu

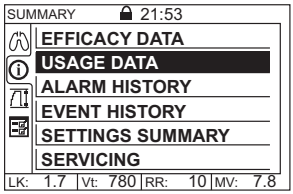
The patient summary menu allows you to view details about the time used, a summary of your device settings, and the current software version of your VPAP III ST-A with QuickNav.

The below example shows the progression of screens as you navigate to the Usage Data from the Patient Summary Menu.

1



2



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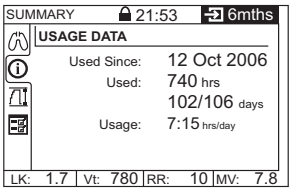
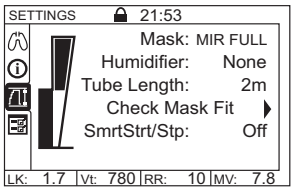


The data displayed in the Summary menu screens is view only. In some Summary menu screens, pressing **Enter** when the soft key in the title bar is selected allows you to choose a time period over which the data is measured (eg, a day, a week, a month, etc.).

Patient Settings Menu

The Patient Settings menu allows you to view and change settings such as mask type, tube length and the humidifier used. You can also access the Mask-Fit feature.



WARNING
If these settings do not match your system set-up, this may alter the pressure you actually receive and reduce the effectiveness of your treatment.

Function	Default	Function Description	Settings
Mask	MIR FULL	Selects your mask type.	See www.resmed.com or ask your clinician for the correct setting for your mask type.
Humidifier	NONE	Selects the type of humidifier to be used with the device.	NONE, H2i (HumidAire 2iC), PASSOVER, HUMIDAIRE If the HumidAire 2i is used, it is automatically detected and H2i is displayed.
Tube Length	2 m	Selects the length of air tubing connecting your mask to the device.	2 m, 3 m
Check Mask-Fit		Allows you to check your mask-fit star rating.	View only

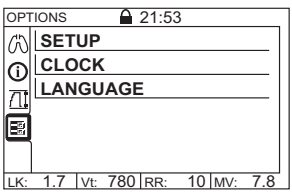
Function	Default	Function Description	Settings
SmartStart™ (SmrtStrtStp)	OFF	If SmartStart is enabled, the device will start automatically when you breathe into the mask and will stop automatically when you take your mask off (SmartStop). This means you do not have to press the **Start/ Stop** key to begin or end treatment.*, †	ON/OFF

* If you select "Mir Full" as the mask option, SmartStop is automatically disabled. SmartStart may not work with a full face mask due to safety features of the mask.

† When the Leak or Low MV Alarms are set to ON, SmartStop is automatically disabled. SmartStop cannot be used with the Leak or Low MV Alarms because, if either of these conditions occur, SmartStop will stop treatment before the alarm signal is activated.

Patient Options Menu

The Patient Options menu allows you to set the local time, date and language and to test and change the alarm volume.



Function	Function Description	Default	Settings
Setup	• Alarm Vol/Test: Allows you to change and test the alarm volume. ***Note:*** *When you select the volume level and when you press enter, the alarm will beep at the selected volume as a test.*	Medium	Low, Medium and High.
	• LCD Backlight	AUTO	ON/AUTO
Clock	Allows you to set the time and date.		
Language	Selects the menu language.*	English	English, German, French, Italian, Spanish, Dutch, Portuguese.

* A tick will appear next to the currently selected language.

The Alarms

This device is fitted with alarms to alert you to changes that will affect your treatment.

Alarm Mute Key

You can mute an alarm by pressing the **Alarm Mute** key  once. Pressing this key a second time will un-mute the alarm. If the problem is still present, the alarm will sound again after two minutes. An alarm LED will remain lit for as long as the problem is present. The Title bar of the LCD will display the alarm description while the alarm is muted.

Testing the Alarm

When the device is turned on, the LEDs will flash and the alarm will beep to confirm that the alarm is working.

Setting the Alarm Volume

You can set and test the alarm volume from the Patient Options Menu. The alarm will beep at the selected volume when you press **Enter**.

All menus remain available during an alarm. Treatment screens are not viewable during an alarm condition.

Alarms Troubleshooting

The most common reason for an alarm to sound is because the system has not been properly assembled. Check that the air tubing has been properly attached to the flow generator and mask (and humidifier if used).

When an alarm has been activated, the LCD screen will display either alarm information or recommended instructions for you or your clinician.

Note: *The alarm actions listed below are based on having the appropriate alarm settings for your therapy. When an alarm is activated, consult your clinician.*

CAUTION
In the event of power failure or machine malfunction, remove the mask to avoid rebreathing your exhaled air.

Warning Signal/Cause	Action
For all the medium priority alarms listed below, you will hear a **single intermittent tone** and the **yellow LED will flash**.	
LCD: LCD turns off **The flow generator stops delivering air pressure.**	
• Power failure. • Power cord is disconnected or device switched off while delivering treatment (without pressing the Start/Stop key).	Remove your mask until power is restored. ***Notes:*** • *Treatment will re-start when power is restored.* • *Unless muted, the alarm will sound for at least two minutes in the event of a power failure.*
LCD: `CHECK TUBE` **The flow generator stops delivering air pressure.**	
• Air tubing disconnected from the HumidAire 2i/2iC.	1. Check that the air tubing is connected properly to the HumidAire 2i/2iC. 2. Check that the HumidAire 2i/2iC or front cover is connected properly to the flow generator.

Warning Signal/Cause	Action
	3. Turn the device off and on again at the power switch.
• There is a blockage in the air circuit.	1. Check the air circuit for a blockage. 2. Remove blockage. 3. Re-start therapy.
• Hardware failure.	If the alarm persists, return the unit to ResMed for servicing.
LCD: `IPAP LOWER`	
Device is operating outside device specifications.	Continue using and contact your clinician about this alarm. Device settings may require adjustment.
LCD: `SYSTEM ERROR-xxx TURN OFF & CALL SERVICE!` **The flow generator stops delivering air pressure.**	
Component failure.	• Return the device for servicing. • DO NOT USE THE DEVICE.
LCD: `HIGH LEAK!!!`	
High mask leak for more than 20 seconds.	Adjust the mask to minimise leak. See "Using the Mask-Fit Feature" on page 7.
LCD: `LOW PRESSURE:XX`	
• Air pressure at the mask has fallen below the alarm setting level. • Mask is removed while SmartStop has been disabled.	1. Check that the air tubing is connected properly. 2. Turn the device off and on again at the power switch. If the alarm persists, return the unit to ResMed for servicing.
LCD: `HIGH PRESSURE:XX`	
Mask pressure exceeds alarm setting level.	1. The treatment will stop. 2. Turn power off. 3. Turn power back on. 4. Try using the flow generator one more time. 5. If the high pressure alarm activates repeatedly, discontinue use and return to ResMed for servicing. If the alarm does not recur, then continue to use as normal.
LCD: `LOW MV:XX`	
Minute ventilation level has dropped below the alarm setting level.	Contact your clinician.

Warning Signal/Cause	Action
LCD: `NO MASK VENT`	
• Connection of a non-vented mask. • Mask expiratory flow port (vent) may be blocked. • Use of supplemental oxygen with a vented mask.	• Ensure your mask has an expiratory flow port (vent). • Ensure your mask expiratory flow ports (vents) are not blocked. • Contact your clinician. ***Note:*** *The non-vented mask alarm activates within 30 seconds (15 sec on average) of using therapy with a non-vented mask.*

Cleaning and Maintenance

You should regularly carry out the cleaning and maintenance described in this section.

Daily Cleaning	
Mask	Clean the mask according to the instructions supplied with the mask.
Air tubing	Disconnect the air tubing from the device (and humidifier, if used) and store the tubing and mask in a clean, dry place until next use.

CAUTION
Do not store the air tubing in direct sunlight as the tubing may harden over time and eventually crack.

Humidifier	If you are using a humidifier, clean it according to the instructions supplied with the humidifier.

Weekly Cleaning

1. Remove the air tubing from the device *and* the mask.
2. Wash the air tubing in warm water using mild detergent. Rinse thoroughly, hang and allow to dry.
3. Reconnect the air tubing to the air outlet and mask.

CAUTION
- Do not use bleach, chlorine-, alcohol- or aromatic-based solutions (including all scented oils), moisturising or antibacterial soaps to clean the air tubing or the device. These solutions may cause hardening and reduce the life of the product.
- Do not hang the air tubing in direct sunlight as the tubing may harden over time and eventually crack.

Periodic Cleaning

1. Clean the exterior of the device with a damp cloth and mild liquid soap.
2. Inspect the air filter to check if it is blocked by dirt or contains holes. See "Replacing the Air Filter" on page 14.

WARNING
Beware of electric shock. Do not immerse the flow generator or power cord in water. Always unplug the flow generator before cleaning and be sure that it is dry before reconnecting.

CAUTION
Do not attempt to open the device. There are no user serviceable parts inside. Repairs and internal servicing should only be performed by an authorised service agent.

Replacing the Air Filter

Inspect the air filter every month to check if it is blocked by dirt or contains holes. With normal use of the device, the air filter needs to be replaced every six months (or more often if your device is in a dusty environment). To replace the air filter:

1. Remove the air filter cover at the back of the device.
2. Remove and discard the old air filter.
3. Insert a new filter with the blue tinted side facing out.
4. Replace the air filter cover.

WARNING
Do not wash the air filter. The air filter is not washable or reusable.

Servicing

This product (VPAP III ST-A with QuickNav) should be inspected by an authorised ResMed service centre five years from the date of manufacture. Prior to this, the device is intended to provide safe and reliable operation provided that it is operated and maintained in accordance with the instructions provided by ResMed. Applicable ResMed warranty details are provided with the device at the time of original supply. Of course, as with all electrical devices, if any irregularity becomes apparent, you should exercise caution and have the device inspected by an authorised ResMed service centre.

If you feel that your device is not performing properly, see "Troubleshooting" on page 15.

CAUTION
Inspection and repair should only be performed by an authorised agent. Under no circumstances should you attempt to service or repair the flow generator yourself.

Helpful Hints

Travelling with the VPAP III ST-A with QuickNav

International Use

Your device has an internal power adapter that enables it to operate in other countries. It will operate on power supplies of 100–240V, 50–60Hz and 110V, 400Hz. No special adjustment is necessary, but you will require an approved power cord for that country.

Using a Battery to Power the Device

Information regarding suitable DC and battery power supplies for this device can be found on **www.resmed.com** on the **Products** page under **Service and Support**.

Inverter or UPS

The power specifications for an inverter or a UPS are listed in the following table.

Configuration	Continuous Output Power Rating	Peak Output Power Rating
VPAP III ST-A with QuickNav (without HumidAire 2i humidifier)	60W	225W
VPAP III ST-A with QuickNav with HumidAire 2i humidifier **Note***: Use only a pure sine wave inverter when a HumidAire 2i is attached.*	150W	300W (110V inverter) 600W (240V inverter)

The case temperature should be less than 50°C at an ambient temperature of 35°C. (For VPAP III ST-A with QuickNav temperature specifications, see "System Specifications" on page 16.)

Troubleshooting

If there is a problem, try the following suggestions. If the problem cannot be solved, contact your equipment supplier or ResMed. Do not attempt to open the device.

Problem / Possible Cause	Solution
No display.	
Power not connected or switch at back is not on.	Ensure the power cable is connected and that the switch at the back of the device is in the ON position.
Insufficient air delivered from the device.	
Ramp Time is in use.	Wait for air pressure to build up.
Air filter is dirty.	Replace air filter.
Air tubing is kinked or punctured.	Straighten or replace tubing.
Air tubing is not connected properly.	Check air tubing.
Mask and headgear not positioned correctly.	Adjust position of mask and headgear.
Plug(s) missing from access port(s) on mask.	Replace plug(s).
Pressure required for treatment may have changed.	See your clinician to adjust the pressure.
The device does not start when you breathe into the mask (when SmartStart is enabled).	
Power cord not connected properly.	Connect power cord firmly at both ends.
Power outlet may be faulty.	Try another power outlet.
The device is not switched on.	Turn power switch at rear of the device to on (**I**).
SmartStart not on.	Enable SmartStart.

Problem / Possible Cause	Solution
Breath is not deep enough to trigger SmartStart.	Take a deep breath in and out through the mask.
There is excessive leak.	Adjust position of mask and headgear.
Plugs may be missing from ports on mask.	Replace plug(s).
Air tubing is not connected properly.	Connect firmly at both ends.
Air tubing is kinked or punctured.	Straighten or replace.
There is a large impedance (eg, antibacterial filter, oxygen connector) in the air circuit.	Press the Start/Stop key.
The device does not stop when you remove your mask.	
SmartStart/Stop is disabled.	Enable SmartStart/Stop.
Use of a full face mask.	SmartStop does not work with a full face mask.
Incompatible humidifier or mask system being used.	Use only equipment as recommended and supplied by ResMed.
Leak Alarm or Low MV Alarm is set to ON.	Consult your clinician.
Displays error message: `SYSTEM ERROR Call service!`	
Component failure.	Return your device for servicing.
Excessive motor noise.	
Component failure.	Return your device for servicing.

System Specifications

Dynamic pressure characteristics:	• IPAP: 2 cm H_2O to 30 cm H_2O (measured at the end of standard 2 m air tubing)	
	• EPAP: 2 cm H_2O to 25 cm H_2O (measured at the end of standard 2 m air tubing)	
	• CPAP: 4 cm H_2O to 20 cm H_2O (measured at the end of standard 2 m air tubing)	
Maximum single fault pressure:	40 cm H_2O	
Maximum flow (Pressure, measured at the end of standard 2 m air tubing)	**Pressure (cm H_2O)**	**Flow (L/min)**
	4	244
	8	252
	12	245
	16	248
	20	246
Sound pressure level:	<30 dB (tested in accordance with the requirements of ISO 17510-1:2002) <37 dB (tested in accordance with the requirements of ISO 17510-1:2007)	

Sound power level:	<45 dB (tested in accordance with the requirements of ISO 17510-1:2007)
Dimensions (L x W x H):	270 mm x 230 mm x 141 mm
Weight:	2.3 kg
Air outlet:	22 mm taper, compatible with ISO 5356-1:2004 Anaesthetic & Respiratory Equipment - Conical Connectors
Pressure measurement:	Internally mounted pressure transducer
Flow measurement:	Internally mounted flow transducer
Power supply:	AC 100–240V, 50–60Hz, 2.2A; AC 110V, 400 Hz, 2.2A; DC 24V, 2A
Housing construction:	Flame retardant engineering thermoplastic
Environmental conditions:	• Operating Temperature: +5°C to +35°C
	• Operating Humidity: 10%–95% non-condensing
	• Storage and Transport Temperature: -20°C to +60°C
	• Storage and Transport Humidity: 10%–95% non-condensing
Electromagnetic compatibility:	Product complies with all applicable electromagnetic compatibility requirements (EMC) according to IEC60601-1-2, for residential, commercial and light industry environments. For further details, see "Guidance and Manufacturer's Declaration - Electromagnetic Emissions and Immunity" on page 20.
Air filter:	Two-layered, powder-bonded, polyester non-woven fibre
Air tubing:	Flexible plastic, 2 m or 3 m length
IEC 60601-1 classifications:	• Class II (double insulation)
	• Type CF
	• Continuous operation
This flow generator is not suitable for use in the presence of a flammable anaesthetic mixture with air, or with oxygen or nitrous oxide entrained in the flow generator airpath.	

Displayed values

Value	Range	Accuracy	Display Resolution
Pressure sensor at air outlet			
Pressure	-5 to 30 cm H_2O	±0.5 cm H_2O (+ 4% of measured value)	0.1 cm H_2O
Flow sensor in flow generator*			
Leak	0–120 L/min	**	1 L/min
Tidal volume	50–3,000 mL	**	1 mL
Respiratory rate	6–60 BPM	±0.5 BPM†	1 BPM
Minute ventilation	0.6–60 L/min	**	0.1 L/min

* Results may be inaccurate in the presence of leaks or supplemental oxygen.
** The displayed values are estimates. They are provided for trending purposes only.
† Results may be inaccurate if the tidal volume is below 50mL.

Notes:

- *The manufacturer reserves the right to change these specifications without notice.*
- *Further clinical information is available through your authorised ResMed service centre.*

Symbols which may Appear on the Product

 Follow instructions for use;  Class II equipment;  Type CF equipment;

 European Authorised Representative;  Drip proof;  Start/Stop;  Mask-Fit;

 Alarm LEDs;  Alarm Mute;  QuickView;  Enter;  Exit;  AC switch only;

 Manufacturer;  **Environmental information** WEEE 2002/96/EC is a European Directive that requires the proper disposal of electrical and electronic equipment. This device should be disposed of separately, not as unsorted municipal waste. To dispose of your device, you should use appropriate collection, reuse and recycling systems available in your region. The use of these collection, reuse and recycling systems is designed to reduce pressure on natural resources and prevent hazardous substances from damaging the environment. If you need information on these disposal systems, please contact your local waste administration. The crossed-bin symbol invites you to use these disposal systems. If you require information on collection and disposal of your ResMed device please contact your ResMed office, local distributor or go to www.resmed.com/environment.

General Warnings and Cautions

A **warning** alerts you to possible injury.

- The entire manual should be read before using the device.
- Advice contained in this manual should not supersede instructions given by the prescribing physician.
- This device should be used with masks and accessories recommended by ResMed or the prescribing physician. Use of incorrect masks and accessories may adversely affect the function of this device.
- This device is designed for use with masks that allow exhaled gases to be flushed out through vent holes or anti-asphyxia valves. Exhaled gases will be rebreathed if the mask is worn with the machine turned off, or the vent holes are occluded. If this occurs over prolonged periods, suffocation may occur.
- In the event of power failure or machine malfunction, no air pressure will be delivered. Remove the mask.
- This device can be set to deliver pressures up to 30 cm H_2O. In the unlikely event of certain fault conditions, pressures up to 40 cm H_2O are possible.
- This device is not suitable for use in the vicinity of flammable anaesthetics.
- This device should not be used with anaesthetised patients, whose breathing depends entirely on mechanical ventilation.
- If oxygen is used with this device, the oxygen flow should be stopped when the device is not operating. If oxygen flow continues when the device is not operating, oxygen may accumulate within the device and create a risk of fire.
- Do not use this device if there are obvious external defects, unexplained changes in performance or unusual noises.
- Do not open this device case. There are no user serviceable parts inside. Repairs and internal servicing should only be performed by an authorised service agent.

A **caution** explains special measures for the safe and effective use of the device.

- At low EPAP pressures, the flow through the mask vent holes may be inadequate to clear all exhaled gases, and some rebreathing may occur.
- The air flow for breathing produced by this device can be as much as 6°C higher than the temperature of the room. Caution should be exercised if the room temperature is warmer than 32°C.

***Note**: The above are general warnings and cautions. Further specific warnings, cautions and notes appear next to the relevant instructions in the manual.*

Guidance and Manufacturer's Declaration - Electromagnetic Emissions and Immunity

Guidance and manufacturer's declaration – electromagnetic immunity

The VPAP III ST-A with QuickNav is intended for use in the electromagnetic environment specified below. The customer or the user of the VPAP III ST-A with QuickNav should assure that it is used in such an environment.

Immunity test	IEC60601-1-2 test level	Compliance level	Electromagnetic environment –guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6 kV contact ±8 kV air	±6 kV contact ±8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	±2 kV for power supply lines ±1 kV for input/ output lines	±2 kV Not Applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	±1 kV differential mode ±2 kV common mode	±1 kV differential mode ±2 kV common mode	Mains power quality should be that of a typical commercial or hospital environment.
Voltage dips, short interruptions and voltage variations on power supply input lines. IEC 61000-4-11	<5% Ut (>95% dip in Ut) for 0.5 cycle 40% Ut (60% dip in Ut) for 5 cycles 70% Ut (30% dip in Ut) for 25 cycles <5% Ut (>95% dip in Ut) for 5 sec	< 12 V (>95% dip in 240V) for 0.5 cycle 96 V (60% dip in 240 V) for 5 cycles 168 V (30% dip in 240 V) for 25 cycles <12 V (>95% dip in 240 V) for 5 sec	Mains power quality should be that of a typical commercial or hospital environment. If the user of the VPAP III ST-A with QuickNav requires continued operation during power mains interruptions, it is recommended that the VPAP III ST-A with QuickNav be powered from an uninterruptible power source.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment. Portable and mobile RF communications equipment should be used no closer to any part of the VPAP III ST-A with QuickNav, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	3 Vrms	$d = 1.17 \sqrt{P}$
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 2.5 GHz	10 V/m	$d = 0.35 \sqrt{P}$ 80 MHz to 800 MHz $d = 0.70 \sqrt{P}$ 800 MHz to 2.5 GHz where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

NOTE 1: Ut is the AC mains voltage prior to application of the test level.
NOTE 2: At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 3: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the VPAP III ST-A with QuickNav is used exceeds the applicable RF compliance level above, the VPAP III ST-A with QuickNav should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the VPAP III ST-A with QuickNav.

[b] Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 10 V/m.

Guidance and manufacturer's declaration – electromagnetic emissions

The VPAP III ST-A with QuickNav is intended for use in the electromagnetic environment specified below. The customer or the user of the VPAP III ST-A with QuickNav should assure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR11	Group 1	The VPAP III ST-A with QuickNav uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The VPAP III ST-A with QuickNav is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage network that supplies buildings used for domestic purposes.
Harmonic Emissions IEC 61000-3-2	Class A	
Voltage Fluctuations/Flicker Emissions IEC 61000-3-3	Complies	

Medical Electrical Equipment needs special precautions regarding EMC and needs to be installed and put into service according to EMC information provided in this document.

Warnings: The VPAP III ST-A with QuickNav should not be used adjacent to or stacked with other equipment.
If adjacent or stacked use is necessary, the VPAP III ST-A with QuickNav should be observed to verify normal operation in the configuration in which it will be used.
The use of accessories (eg, humidifiers) other than those specified in this manual is not recommended. They may result in increased emissions or decreased immunity of the VPAP III ST-A with QuickNav.

Recommended separation distances between portable and mobile RF communications equipment and the VPAP III ST-A with QuickNav

The VPAP III ST-A with QuickNav is intended for use in an environment in which radiated RF disturbances are controlled. The customer or the user of the VPAP III ST-A with QuickNav can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the VPAP III ST-A with QuickNav as recommended below, according to the maximum output power of the communications equipment.

	Separation distance according to frequency of transmitter m		
Rated maximum output power of transmitter W	150 kHz to 80 MHz d = 1.17 √P	80 MHz to 800 MHz d = 0.35 √P	800 MHz to 2.5 GHz d = 0.7 √P
0.01	0.17	0.04	0.07
0.1	0.37	0.11	0.22
1	1.17	0.35	0.7
10	3.69	1.11	2.21
100	11.70	3.50	7.0

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be determined using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.
NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.
NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

Limited Warranty

ResMed warrants that your ResMed product shall be free from defects in material and workmanship for the period specified below from the date of purchase by the initial consumer. This warranty is not transferable.

Product	**Warranty Period**
ResMed humidifiers, ResControl™, ResLink™, ResTraxx™	1 Year
ResMed flow generators	2 Years
Accessories, mask systems (including mask frame, cushion, headgear and tubing). Excludes single-use devices.	90 Days

Note: *Some models are not available in all regions.*

If the product fails under conditions of normal use, ResMed will repair or replace, at its option, the defective product or any of its components. This Limited Warranty does not cover:
a) any damage caused as a result of improper use, abuse, modification or alteration of the product;
b) repairs carried out by any service organisation that has not been expressly authorised by ResMed to perform such repairs;
c) any damage or contamination due to cigarette, pipe, cigar or other smoke;
d) any damage caused by water being spilled on or into a flow generator.

Warranty is void on product sold, or resold, outside the region of original purchase. Warranty claims on defective product must be made by the initial consumer at the point of purchase.

This warranty is in lieu of all other express or implied warranties, including any implied warranty of merchantability or fitness for a particular purpose. Some regions or states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

ResMed shall not be responsible for any incidental or consequential damages claimed to have occurred as a result of the sale, installation or use of any ResMed product. Some regions or states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from region to region.

For further information on your warranty rights, contact your local ResMed dealer or ResMed office.

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